

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A node in a packet communication system comprised of nodes and links, said node being a destination node as a destination of a packet transmitted from a correspondent node, said node comprising:

an advertisement receiver configured to receive an advertisement of path information about a path from the correspondent node to the destination node;

a Path MTU setting unit configured to set the Path MTU on the basis of the path information;

a Path MTU discovery execution determining unit configured to determine whether a discovery of a Path MTU of the path from the correspondent node to the destination node should be executed, based on the path information; and

~~a Path MTU setting unit configured to set the Path MTU on the basis of the path information; and~~

a Path MTU announcer configured to announce the Path MTU set by the Path MTU setting unit when the Path MTU discovery execution determining unit determines that the discovery of the Path MTU should be executed.

Claim 2 (Currently Amended): A node in a packet communication system comprised of nodes and links, said node being a destination node as a destination of a packet transmitted from a correspondent node, said node comprising:

a multiple tunnel entry-point advertisement receiver configured to receive an advertisement of information about an entry point of multiple tunnels on a path from the correspondent node to the destination node;

a Path MTU discovery execution determining unit configured to determine whether a discovery of a Path MTU of the path from the correspondent node to the destination node should be executed, based on the number of entry points of multiple tunnels;

a Path MTU calculator configured to calculate the Path MTU on the basis of the number of entry points of multiple tunnels when the Path MTU discovery execution determining unit determines that the discovery of the Path MTU should be executed; and

a Path MTU announcer configured to announce the Path MTU calculated by the Path MTU calculator when the Path MTU calculator calculates the Path MTU.

Claim 3 (Currently Amended): A node in a packet communication system comprised of nodes and links, said node being a destination node as a destination of a packet transmitted from a correspondent node, said node comprising:

a link MTU advertisement receiver configured to receive an advertisement of a link MTU of a link connected to each node on a path from the correspondent node to the destination node;

a Path MTU setting unit configured to set a Path MTU of the path from the correspondent node to the destination node, out of link MTUs received by the link MTU advertisement receiver;

a Path MTU discovery execution determining unit configured to determine whether a discovery of a Path MTU should be executed, on the basis of the Path MTU set by the Path MTU setting unit; and

a Path MTU announcer configured to announce the Path MTU set by the Path MTU setting unit when the Path MTU discovery execution determining unit determines that the discovery of the Path MTU should be executed.

Claim 4 (Previously Presented): The node in the packet communication system according to Claim 2, wherein said destination node is a mobile node that can move in the packet communication system, and

wherein the multiple tunnel entry-point advertisement receiver determines that a mobility anchor point existing on the path from the correspondent node to the mobile node and managing local movement of the mobile node is an entry point of multiple tunnels.

Claim 5 (Previously Presented): The node in the packet communication system according to Claim 4, wherein the Path MTU discovery execution determining unit is configured to determine whether the discovery of the Path MTU should be executed, based on the number of mobility anchor points existing on the path from the correspondent node to the mobile node.

Claim 6 (Previously Presented): The node in the packet communication system according to Claim 5, wherein the multiple tunnel entry-point advertisement receiver determines that each mobility anchor point selected upon a movement of the mobile node to update the path is the entry point of multiple tunnels,

wherein the Path MTU discovery execution determining unit is configured to compare the number of mobility anchor points existing on the path from the correspondent node to the mobile node before the movement of the mobile node with that after the movement of the mobile node and determines that the discovery of the Path MTU should be executed, when the number of mobility anchor points before the movement is different from that after the movement,

wherein the Path MTU calculator is configured to calculate the Path MTU according to (the Path MTU before the movement - a header length added at a mobility anchor point ×

(the number of mobility anchor points after the movement - the number of mobility anchor points before the movement)), and

wherein the Path MTU announcer is configured to announce the Path MTU calculated by the Path MTU calculator, by a binding update message.

Claim 7 (Previously Presented): The node in the packet communication system according to Claim 4, wherein a mobility anchor point in an arbitrary layer existing on the path from the correspondent node to the mobile node sequentially announces information about a mobility anchor point in each layer announced by a mobility anchor point in a higher layer than the arbitrary layer and information of its own including a selection priority and layer information, to a mobility anchor point in a lower layer than the arbitrary layer, and

wherein the multiple tunnel entry-point advertisement receiver is configured to receive information about a mobility anchor point in each layer announced by a mobility anchor point in a lowest layer existing on the path from the correspondent node to the mobile node, from a connected node and selects a mobility anchor point in each layer on the basis of selection priorities in the information about mobility anchor points.

Claim 8 (Previously Presented): The node in the packet communication system according to Claim 3, wherein the destination node is a mobile node that can move in the packet communication system, and

wherein the link MTU advertisement receiver is configured to retrieve a link MTU of each mobility anchor point existing on the path from the correspondent node to the mobile node and managing local movement of the mobile node.

Claim 9 (Previously Presented): The node in the packet communication system according to Claim 8, wherein the link MTU advertisement receiver is configured to receive a link MTU of each mobility anchor point existing on said path, from an advertisement of the link MTU from the mobility anchor point,

wherein the Path MTU setting unit is configured to set a minimum link MTU among link MTUs of mobility anchor points retrieved by the link MTU advertisement receiver, as a Path MTU,

wherein the Path MTU discovery execution determining unit is configured to compare the Path MTU before the movement of the mobile node with that after the movement and determines that the discovery of the Path MTU should be executed, when the Path MTU before the movement is different from that after the movement, and

wherein the Path MTU announcer is configured to announce the Path MTU set by the Path MTU setting unit, by a binding update message.

Claim 10 (Previously Presented): A correspondent node in a packet communication system comprised of nodes and links, said correspondent node transmitting a packet to the node as set forth in Claim 1,

said correspondent node configured to update a Path MTU preserved in itself, based on the Path MTU announced by said Path MTU announcer.

Claim 11 (Previously Presented): The correspondent node in the packet communication system according to Claim 10, wherein the destination node is a mobile node that can move in the packet communication system, and

wherein upon a movement of the mobile node to update a connected node, the Path MTU preserved in the correspondent node is updated on the basis of the Path MTU

announced by the Path MTU announcer, a packet size is changed based on the Path MTU thus updated, and a packet of the packet size thus changed is transmitted to the mobile node.

Claim 12 (Previously Presented): A mobility anchor point in a packet communication system comprised of nodes and links, said mobility anchor point being a mobility anchor point managing local movement of the mobile node as set forth in Claim 4,

said mobility anchor point configured to announce to a mobility anchor point in a lower layer existing on the path from the correspondent node to the mobile node, information about a mobility anchor point in each layer announced by a mobility anchor point in a higher layer existing on the path, and information of its own including a selection priority and layer information.

Claim 13 (Previously Presented): A mobility anchor point in a packet communication system comprised of nodes and links, said mobility anchor point being a mobility anchor point managing local movement of the mobile node as set forth in Claim 8, said mobility anchor point comprising:

a link MTU announcer configured to announce a link MTU of a link connected to said mobility anchor point, to the mobile node.

Claim 14 (Previously Presented): The mobility anchor point in the packet communication system according to Claim 13, wherein the link MTU announcer is configured to announce the link MTU by adding the link MTU to an acknowledgement message to a binding update message transmitted from the mobile node.

Claim 15 (Previously Presented): A home agent in a packet communication system comprised of nodes and links, said home agent being a home agent managing global movement of the mobile node as set forth in Claim 4, said home agent comprising:

a multiple tunnel entry-point determining unit configured to determine whether said home agent is an entry point of multiple tunnels on the path from the correspondent node to the mobile node;

a Path MTU calculator configured to calculate a Path MTU of the path from the correspondent node to the mobile node, based on the number of entry points of multiple tunnels at the home agent; and

a Path MTU announcer configured to announce the Path MTU calculated by the Path MTU calculator, to the correspondent node.

Claim 16 (Previously Presented): The home agent in the packet communication system according to Claim 15, wherein the Path MTU calculator is configured to recalculate the Path MTU, based on the Path MTU announced by the mobile node, and

wherein the Path MTU announcer is configured to announce the Path MTU calculated by the Path MTU calculator, by an ICMP Packet Too Big message.

Claim 17 (Previously Presented): A home agent in a packet communication system comprised of nodes and links, said home agent being a home agent managing global movement of the mobile node as set forth in Claim 8, said home agent comprising:

an on-path determining unit configured to determine whether said home agent exists on the path from the correspondent node to the mobile node;

a Path MTU setting unit configured to set a Path MTU of the path from the correspondent node to the mobile node, based on a link MTU of a link connected to the home agent; and

a Path MTU announcer configured to announce the Path MTU set by the Path MTU setting unit, to the correspondent node.

Claim 18 (Previously Presented): The home agent in the packet communication system according to Claim 17, wherein the Path MTU setting unit is configured to set a new Path MTU, based on the Path MTU announced by the mobile node, and

wherein the Path MTU announcer is configured to announce an ICMP Packet Too Big message containing the Path MTU set by the Path MTU setting unit, to the correspondent node.

Claim 19 (Currently Amended): A packet communication system comprised of nodes and links, wherein a destination node as a destination of a packet transmitted from a correspondent node, comprises:

advertisement receiving means for receiving an advertisement of path information about a path from the correspondent node to the destination node;

Path MTU setting means for setting the Path MTU on the basis of the path information;

Path MTU discovery execution determining means for determining whether a discovery of a Path MTU of the path from the correspondent node to the destination node should be executed, based on the path information; and

~~Path MTU setting means for setting the Path MTU on the basis of the path information; and~~



Path MTU announcing means for announcing the Path MTU set by the Path MTU setting means when the Path MTU discovery execution determining means determines that the discovery of the Path MTU should be executed, and

wherein the correspondent node updates a Path MTU preserved in itself, based on the Path MTU announced by the Path MTU announcing means when the Path MTU announcing means announces the Path MTU.

Claim 20 (Currently Amended): A packet communication system comprised of nodes and links, wherein a destination node as a destination of a packet transmitted from a correspondent node, comprises:

multiple tunnel entry-point advertisement receiving means for receiving an advertisement of information about an entry point of multiple tunnels on a path from the correspondent node to the destination node;

Path MTU discovery execution determining means for determining whether a discovery of a Path MTU of the path from the correspondent node to the destination node should be executed, based on the number of entry points of multiple tunnels;

Path MTU calculating means for calculating the Path MTU on the basis of the number of entry points of multiple tunnels when the Path MTU discovery execution determining means determines that the discovery of the Path MTU should be executed; and

Path MTU announcing means for announcing the Path MTU calculated by the Path MTU calculating means when the Path MTU calculating means calculates the Path MTU, and

wherein the correspondent node updates a Path MTU preserved in itself, based on the Path MTU announced by the Path MTU announcing means when the Path MTU announcing means announces the Path MTU.

Claim 21 (Currently Amended): A packet communication system comprised of nodes and links, wherein a destination node as a destination of a packet transmitted from a correspondent node, comprises:

link MTU advertisement receiving means for receiving an advertisement of a link MTU of a link connected to each node on a path from the correspondent node to the destination node;

Path MTU setting means for setting a Path MTU of the path from the correspondent node to the destination node, out of link MTUs received by the link MTU advertisement receiving means;

Path MTU discovery execution determining means for determining whether a discovery of a Path MTU should be executed, based on the Path MTU set by the Path MTU setting means; and

Path MTU announcing means for announcing the Path MTU set by the Path MTU setting means when the Path MTU discovery execution determining means determines that the discovery of the Path MTU should be executed, and

wherein the correspondent node updates a Path MTU preserved in itself, based on the Path MTU announced by the Path MTU announcing means when the Path MTU announcing means announces the Path MTU.

Claim 22 (Currently Amended): A Path MTU discovery method at a destination node as a destination of a packet transmitted from a correspondent node in a packet communication system comprised of nodes and links, said method comprising:

an advertisement receiving step of receiving an advertisement of path information about a path from the correspondent node to the destination node;

a Path MTU setting step of setting the Path MTU on the basis of the path information;

a Path MTU discovery execution determining step of determining whether a discovery of a Path MTU of the path from the correspondent node to the destination node should be executed, based on the path information; and

~~a Path MTU setting step of setting the Path MTU on the basis of the path information;~~  
~~and~~

a Path MTU announcing step of announcing the Path MTU set in the Path MTU setting step when the Path MTU discovery execution determining step determines that the discovery of the Path MTU should be executed.

Claim 23 (Currently Amended): A Path MTU discovery method at a destination node as a destination of a packet transmitted from a correspondent node in a packet communication system comprised of nodes and links, said method comprising:

a multiple tunnel entry-point advertisement receiving step of receiving an advertisement of information about an entry point of multiple tunnels on the path from the correspondent node to the destination node;

a Path MTU discovery execution determining step of determining whether a discovery of a Path MTU of the path from the correspondent node to the destination node should be executed, based on the number of entry points of multiple tunnels;

a Path MTU calculating step of calculating the Path MTU on the basis of the number of entry points of multiple tunnels when the Path MTU discovery execution determining step determines that the discovery of the Path MTU should be executed; and

a Path MTU announcing step of announcing the Path MTU calculated in the Path MTU calculating step when the Path MTU calculating step calculates the Path MTU.

Claim 24 (Currently Amended): A Path MTU discovery method at a destination node as a destination of a packet transmitted from a correspondent node in a packet communication system comprised of nodes and links, said method comprising:

a link MTU advertisement receiving step of receiving an advertisement of a link MTU of a link connected to each node on a path from the correspondent node to the destination node;

a Path MTU setting step of setting a Path MTU of the path from the correspondent node to the destination node, out of link MTUs received in the link MTU advertisement receiving step;

a Path MTU discovery execution determining step of determining whether a discovery of a Path MTU should be executed, on the basis of the Path MTU set in the Path MTU setting step; and

a Path MTU announcing step of announcing the Path MTU set in the Path MTU setting step when the Path MTU discovery execution determining step determines that the discovery of the Path MTU should be executed.

Claim 25 (Previously Presented): The node as set forth in Claim 1, wherein the advertisement receiver is configured to receive the advertisement of path information including information about any one or more of link MTUs, path MTU, and entry points of multiple tunnels.

Claim 26 (Previously Presented): The node as set forth in Claim 1, wherein the destination node is a mobile node.